

Evolutionary Biologist in Land of Orthodox Christianity and Communist Atheism: Lessons for the Relationship of Science and a Weltanschauung Including Religious Worldviews

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Abstract

The well established contemporary position of possibility of non-conflict relationship between science and various worldviews is epistemologically based on the concept of methodological naturalism – an approach that allows only natural causes and processes to be a part of scientific explanations- that can coexist with a wide variety of different worldviews. This approach is substantially different from the position of ontological naturalism which is basically the claim that nature is the only thing that exists. In fact, ontological naturalism itself represents one of many possible worldviews. Separation of science and worldview realms is not a new standpoint but has a long tradition in epistemology that can be tracked to works of D. Hume, G. E. Moore and others.

However, an overwhelming number of studies that addressed the relationship of *Weltanschauung* with evolutionary biology concentrated solely on the evolution/religion relation. This bias has historical reasons, starting with studies of the acceptance of Darwinian paradigm in XIX century Anglican England, reflecting the global importance of the Roman Catholic Church and its changing position on evolution, as well as dealing with well-known pseudoscientific attacks on biology by the fundamentalist wing of American Protestantism (creationist and ID movements). This bias in presentation led to significant misunderstandings and blurred the fact that worldviews/ideologies other than religion can be imposed on science, often under the banner of “scientific truth” and with support of significant parts of the scientific community. In some cases it also led to incorrect conclusions that separation of facts (science) and values (worldview) prevent the scientific investigation of values, or that non-overlapping magisteria approach means that value issues lie solely within the competence of religion.

Former socialist countries with significant Orthodox Christian population were faced with extremely different “border disputes” between science and worldviews. Experiences from those countries are therefore very useful since they can remind us of accurate epistemological background of relationship between science and worldviews, promote proper approach in scientific education and enable successful general popularization of science. These effects are not limited to the countries in question but are applicable in many other circumstances (e.g. to Islamic countries).

Science is one of our main tools for coping with the challenges of the future, and biology in particular is expected to play a major role in future developments (Kitcher 1996). Evolutionary biology is cornerstone of modern biology and is playing crucial role in various applied fields, from biomedicine to environmental protection and conservation of the biodiversity (Futuyma 1998). Scientific literacy of the general population and science education are extremely important in that respect, and situation with that in our country is currently far from desired one (Tapacjev 2009). As a part of endeavor to raise awareness, clarification about relation of science and the prevailing worldviews is needed in public education and those activities can be specific for different countries or regions

Modern biology originated more than 150 years ago by publication of Darwin's Origin of species (Darwin, 1859) and since then it is in the epicenter of discussions regarding epistemological status of science (Ruse 1979). Biology is based on the border between "hard" and "soft" sciences and it is in the focus of debates regarding structure of scientific theories (Popper 1974, Thompson 1989, Ayala and Dobzhansky 1974, Rosenberg 1985,1993, Hull 1999, Downes 2000). Darwinian paradigm also had significant impact on the other sciences, as well (Wilson 1975, Nitecki and Nitecki 1994, Bradie 1994, Rosenberg 2000, Levy 2004). Therefore it is no surprise that biology is also in the focus of discussion about difference between science and worldviews.

Most scientists today agree on possibility of non-conflict relationship between science and various worldviews. Although this topic emerge each time with different focus and terminology, with debate over Gould's non-overlapping magisteria (Gould 1996) as a recent example, separation of science and worldviews has a long tradition . It can be traced back to Hume (1779) and Moore (1903) and distinctions between descriptive and proscriptive approaches and fact/value distinction- distinction between "Is" and "Ought". Those positions fall within the line advocating separation of facts and values and therefore between science and worldviews (Tapacjev 2002). It can be also found in positions of, among others, Dobzhansky (1967), Ayala (1974, 2008, 2009), Kitcher (1983), Gould (1996), Ruse (2001). Gould's position (1996) about existence of Non overlapping magisteria was often criticized as giving religion special position in moral issues (Dawkins 2006). However, while Gould focused his interest on the relationship between biology and religion, it is just special case of relationship between science and worldviews that is best viewed through distinction between Methodological and Ontological Naturalisms. Methodological naturalism is an approach that allows only natural causes and processes to be a part of scientific explanations- that can coexist with a wide variety of different worldviews (Pennock 1999)¹. This approach is substantially different from the position of ontological naturalism which is basically the claim that nature is the only thing that exists. In fact, ontological naturalism itself represents one of many possible worldviews.

Conflict interferences between sciences and worldviews in field of biology were not limited only to religious worldviews and borders were crossed from both sides, starting

¹ There are attempts to distinguish between (Boundry et al 2010). This distinction coincides with distinction between proscriptive and descriptive definitions of science , Position of methodological naturalism was also criticized from by Christian philosopher Alvin Plantinga (1996) from his worldview position, while Richard Dawkins (2006) criticized non conflict position from his worldview standpoint

with social darwinism of the late XIX century (). In infamous case of eugenics movement that led to grave consequences in USA and Western Europe we had an example of attempt to misuse science in particular political programme (Kevles 1985, Paul 1998). On the other hand, in Soviet bloc science was abused by lysenkoism - ideological construct that stalled development of genetics in affected countries for many years (Joravsky 1970, Дубинин 1988, Гайсинович 1988, Фролов 1988, Тарасјев 1998)

Situation in Serbia regarding general scientific literacy and public perception of evolutionary biology is complicated. Need for education and popularization of biology exists in situation where abundant pseudoscientific literature in biology is being translated and attacks on evolutionary biology sometimes take form of institutional action, as in case where former minister of education² tried to remove proper presentation of evolutionary biology from elementary schools curricula (Тарасјев 2009, Туцић Н и Стојковић Б. 2009). That attempt was motivated by creationist arguments and her religious worldview³.

Since argumentation that is related mostly to worldview position rather than scientific one dominate ongoing public discussions regarding evolutionary biology, exploration of historical background for that situation is needed. In Serbia, exploring influence of two dominating worldviews of the XX century – Orthodox Christianity and Communism can shed additional light on this subject. In this contribution I am trying to outline some directions for further investigations of that issue that can help in raising public awareness and scientific literacy and help Serbia to successfully cope with challenges of the XXI century.

Biology and religious worldview: Reception of evolutionary biology by various Christian denominations

Contemporary discussions regarding relationship between biological science and religion are mostly concentrated on relation between evolutionary biology and position of various protestant denominations as well as Roman Catholic Church. Historically first debates were held within Anglican Church since in the time of Darwin professors at English Universities were ordained Anglican clerics, so both criticism and support for new approach was coming from the same institution. Taking into account astonishing novelty of the Darwin position that could be compared with Copernican revolution three centuries before⁴ spread and acceptance of Darwin ideas were extremely rapid (Ruse 1979). Catholic Church in that time was, however, entering its rather conservative period under longest reigning pope in the history of the church – Pius IX (famous *Pio Nono*). Postive reception of Darwin ideas in Catholic church will have to wait until middle of XX Century and Encyclical of pope Pius XII *Humani Generis* (1950), and gaining full acceptance in the end of XX century by pope John Paul II in his address to Pontifical

² She resigned from that post after strong reaction to that move by scientists and general public

³ While at the time of that affair her position was sometimes defended as attempt to make the curricula “easier for students”, true motives of former minster Mrs Ijljana Čplić were clearly revealed in her 2009 interview for magazine *Press* (29.11.2009) under the title “My grandfather was not an ape!”

⁴ Attempts to add to those two scientific revolutions works of Freud and Marx are, in author opinion, unjust

Academy of sciences (1996). Due to centralized nature of its organization, this becomes official position of Roman Catholic Church.

Negative position towards Darwinian paradigm of extreme wing of Protestantism was formulated at the Niagara Bible Conference (in 1895) and in series of publications called *Fundamentals* (from 1910 to 1915) which give the fundamentalists movement its name. While being successful in banning evolutionary biology from public schools until mid sixties, fundamentalists had to change their tactics and to promote their ideological agenda under the disguise of pseudoscientific “theories” like creationism and, more recently, Intelligent Design⁵. While this position is not accepted by moderate protestants, today it is most covered segment of religion-science relationship both in media and in various other publications. While those movements originated in the US Bible Belt, they got followers in other regions and their publications reached many other countries including Serbia.

In the time of publication of Darwin’s *Origin of Species* most countries with predominant orthodox population were struggling to achieve its independence from Ottoman Empire (Greece, Serbia, Romania, Bulgaria, and Montenegro) with Russian Empire as a sole exception. Other traditional Orthodox Patriarchates (Constantinople, Alexandria, Antiochia, and Jerusalem ones) had mostly historical role with few followers and were based in countries in which Islam was dominant religion. Orthodox churches do not have central authority comparable to the pope, they have great autonomy (*autocephaly*) and some of them are decentralized to a great extent. They were also not in the position of the Angelica church that had evolutionary debate going on immediately after publication of Darwin study within their own ranks. Therefore it is impossible to speak about unified official position of Orthodox theology towards evolutionary biology in the end of XIX and beginning of XX century. That does not mean that various positions expressed by orthodox theologians and cleric should not be explored, and preliminary inspections provide some interesting results. For example, Dictionary of theology that was published in the St Petersburg in 1900⁶ contains term “Darwinism” with extremely positive evaluations of Charles Darwin and his work as fundamental for modern biology. In XX century almost all traditionally orthodox countries (with exception of Greece and Cyprus) fell under communist rule (Russia since 1917 and other countries after II World War). In communist doctrine Darwin was praised, used in atheistic indoctrination and even confronted with some other biological disciplines such as genetics (in *lysenkoism*). On the other side, religion was suppressed in the different degree in different communist countries, with those campaigns reaching extremely bloody peaks in the Soviet Union (Регельсон 1977). This was the situation in which most of the orthodox countries witnessed fall of communist system in 1989 – 91.

⁵ History of those movements and their clashes with science are extensively covered by many authors such as Numbers (1992), Kitcher (1983), Ruse (1988), Pennock (1999) and, in Serbian, Туцић (1996) and Тарацјев (1999, 2004)

⁶ *Полный православный богословский энциклопедический словарь*. 1900 .В 2-х тт. Санкт-Петербург

Perception of Evolutionary Biology in Christian Orthodox countries after fall of Communism

After the fall of communism all things that were in public perception connected with previous ideology came under scrutiny, which lead some religious circles to view evolution as a part of Marxist doctrine and express negative position towards evolutionary biology. While many prominent theologians expressed their positive attitude towards Darwin and foundations of modern biology⁷, since 1990 there been lot of publications that attacked evolutionary biology from religious point of view. In Serbia, those publications consisted mostly of translations from Russian but with content that is identical with positions of American fundamentalists⁸.

On the other hand, original pseudoscientific publications of creationists had “scientific flavor” and were coming from West, which in some circles also added to their “credibility”. Period after fall of communism was very beneficial for all other kinds of pseudoscientific approaches and charlatanism, with case of “New chronology” of Russian mathematician A.T Fomenko as a most blatant example⁹.

Treatment of evolutionary biology as a part of the Marxist doctrine in creation of pseudoscientific *lysenkoism* also had influence on perception of Darwin in some circles as a part of the “old ideology”. Perception of evolutionary biology as primarily ideological issue was further facilitated in post-communist countries by highly ideological accounts of Richard Dawkins (2006) as well as attacks on Gould’s (1996) concept of non overlapping magisteria from both sides of ideological spectrum. Gould limited his approach to relationship between biology and religion. This left many people that are not religious very uncomfortable with notion that they should leave values and moral issues to religion only. When putted in the right context of relation between science and various worldviews, his position becomes more acceptable.

All that in Serbia’s case had led to attempt by Minster for education to remove significant parts of evolutionary biology from biology curricula in elementary schools, While that attempt failed and Minster had to resign due to reaction of scientific community and general public, this is important lesson what can happen in absence of general scientific literacy among government officials. Therefore, several lessons have been learned (and there are more to come) then can help in efficient raising of scientific literacy in the field of evolutionary biology to exploit all possible benefits from that field of inquiry in the XXI century

⁷ For example А М е н ь (1981) Л. 1985), А. Кураев (2006)Милин (

⁸ It was the case with publications of fr.Seraphim Rose, fr. Dmitry Sysoev and fr. Timotey Selsky. It seems that fundamentalist positions that are coming from seemingly orthodox source have higher probability to be accepted.

⁹ See "Антифоменко". Сборник Русского Исторического Общества. Том 3 (151). - Москва, "Русская панорама", 2000.

Lessons learned

Based on work on popularization of modern biology (with evolutionary biology as its cornerstone) in Serbia as well as on preliminary analysis of influence of prevailing worldviews that dominated this country in the last century, some directions for further work can be outlined

Popularization of evolutionary biology should proceed by focusing on science without disguised attempts to promote any particular worldview.¹⁰

Be clear when you are speaking as a scientist and when you are expressing your own views

Put relation of biology and religion in the proper context of science/worldview relation

When discussing reception of science by holders of different worldviews, concentrate on positive examples from most dominant ones

Study the relation of prevalent worldviews to the science in general and evolutionary biology in particular in greater detail¹¹

This approach can be fruitful not only in cases of former communist countries with predominant orthodox population but it also has resemblance for popularization of modern biology in other specific situations like Islamic countries which had tradition of positive relationship to science but are very sensitive to worldview issues. In all those cases successful popularization of science (and modern biology in particular) is extremely important part in coping with the demands of the future.

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¹⁰ For example, works of Richard Dawkins often do not have that distinction. Dawkins *God Delusion* is a good example of mixture of science and worldview that can produce negative effects in popularization of modern biology

¹¹ This contribution to the *Evolution and the Future* is just one attempt to bring attention to this issue, but it is by no means sufficient and further elaboration is needed

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